Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the present application:

Please amend claim 32 as follows and cancel claims 40-49:

1-12. (canceled)

13. (previously presented) A sol-gel process for producing a metal oxide particle comprising:

a) providing a mixture comprising a halogen-containing target molecule and a polyhalogenated metal alkylalkoxy compound;

b) starting a sol-gel process with an initial amount of a metal oxide precursor;

c) adding the mixture from a) to the metal oxide precursor; and

d) ending the sol-gel process.

14. (previously presented) The sol-gel process of claim 13 further comprising adding an additional amount of the metal oxide precursor before step d).

15. (previously presented) The sol-gel process of claim 14, wherein the initial amount of the metal oxide precursor used in step b) is between about 90 and about 10 % and the additional amount of the metal oxide precursor is between about 10 and about 90 %.

16. (previously presented) The sol-gel process of claim 14, wherein the initial amount of the metal oxide precursor used in step b) is between about 75 and about 25 % and the additional amount of the metal oxide precursor is between about 25 and about 75 %.

17. (previously presented) The sol-gel process of claim 13, wherein the time period for starting the sol-gel process in step b) is variable.

18. (previously presented) The sol-gel process of claim 13, wherein the time period for starting the sol-gel process in step b) is less than about 1 hour.

19. (previously presented) The sol-gel process of claim 13, wherein the time period for starting the sol-gel process in step b) is between about 1 and about 20 minutes.

20. (previously presented) The sol-gel process of claim 13, wherein the time period for starting the sol-gel process in step b) is between about 2 and about 10 minutes.

21. (previously presented) The sol-gel process of claim 13, wherein based on the initial amount of the metal oxide precursor between about 0.04 and about 0.4 mol % of the polyhalogenated metal alkylalkoxy compound is used.

22. (previously presented) The sol-gel process of claim 13, wherein based on the initial amount of the metal oxide precursor between about 0.1 and about 0.3 mol % of the polyhalogenated metal alkylalkoxy compound is used.

23. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule comprises between about 5 and about 65 weight % halogen.

24. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule comprises between about 15 and about 50 weight % halogen.

25. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule has a molecular weight between about 250 and about 5000 Dalton.

26. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule has a molecular weight between about 300 and about 4000 Dalton.

27. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule has a molecular weight between about 400 and about 3000 Dalton.

28. (previously presented) The sol-gel process of claim 13, wherein based on the initial amount of the metal oxide precursor between about 0.1 and about 10 % by weight of the target molecule is used.

29. (previously presented) The sol-gel process of claim 13, wherein based on the initial amount of the metal oxide precursor between about 0.2 and about 5 % by weight of the target molecule is used.

30. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule is chlorinated.

31. (previously presented) The sol-gel process of claim 13, wherein the halogen-containing target molecule is fluorinated.

32. (currently amended) The sol-gel process of claim 13, wherein the metal oxide is selected from the group consisting of B_2O_3, Al_2O_3, SiO_2, SnO_2, ZrO_2, TiO_2, and [[or]] combinations thereof.

33. (previously presented) The sol-gel process of claim 14, wherein the adding an additional amount of the metal oxide precursor provides a metal oxide surface coating for the metal oxide particle.

34. (previously presented) The sol-gel process of claim 33, wherein the metal-oxide surface coating is chemically protective.

35. (previously presented) The sol-gel process of claim 33, wherein the metal-oxide surface coating is colorless.

36. (previously presented) The sol-gel process of claim 33, wherein the metal-oxide surface coating is between about 1 and about 30 nm thick.

37. (previously presented) The sol-gel process of claim 33, wherein the metal-oxide surface coating is between about 2 and about 20 nm thick.

38. (previously presented) The sol-gel process of claim 13 further comprising providing at least one functional group.

39. (previously presented) The sol-gel process of claim 38, wherein the functional group is selected from the group consisting of carbonyl groups, amino groups, epoxy groups, hydroxyl groups, and thiol groups.

40 – 49. (canceled)